

HOT PACE ON A SINGLE RAIL

Remarkable Speed on a New Electric Railroad Near Brussels.

TALL CLAIMS OF THE INVENTOR

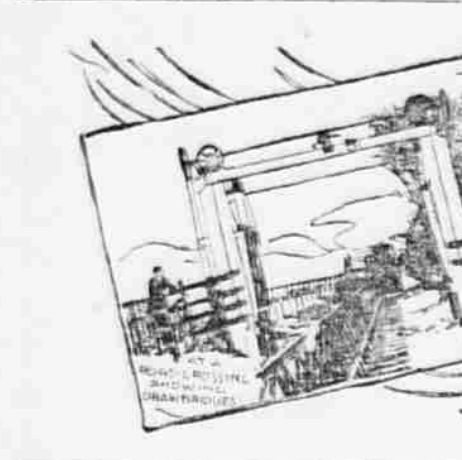
One Hundred Miles an Hour the Regular Rate, with Speeds of 200-300 Curious Features of the Road and Its Engines.

While railroad operators are boasting of making their sixty miles an hour an English inventor has built a line of railroads on which trains run regularly at the rate of 100 miles an hour, and frequently attain a speed of two to three miles a minute. And it is a practical achievement, with full-sized cars capable of carrying the passengers and no practical limit, that F. B. Behr, the engineer and inventor, has just formed a syndicate in London for constructing a line on his new system between Liverpool and Manchester. He calls it, very truly, the "lightning express railway." It will regularly make the distance of about thirty miles in twenty minutes, including stops. Between stations the cars will frequently attain a speed of two miles a minute.

The character of the new road is as strange as its achievements. The trains run on a single rail not several feet above ground on trestle-work, and the motive power is furnished by electricity. The cars somewhat resemble a big oblong box, turned upside down, with wheels and tracks along the part that answers for the bus chassis, and hinged about with guide wheels, so that it cannot jump the track along which it is propelled.

Wonders of the New Road.

Work on the Liverpool and Manchester



THE MONO RAILROAD AND ITS INVENTOR.

First line will begin within a few months. The road line of the kind built by Mr. Behr, Tervueren, near Brussels, Belgium, has been in operation for some months, and has been found to be remarkably successful. It crosses bridge and roads, it crosses around sharp curves, it climbs steep grades, it enters and leaves its depots by means of what are probably the most curious switch arrangements in the world, and it gives its passengers a new sensation—a sensation of a speed of propulsion hitherto unattained in any motorized vehicle invented by man for the transportation of passengers. Indeed, it is said that the curious lengthwise arrangements of the seats within the cars was to prevent the full effect of the appearance of swiftness on the passenger. Mr. Behr says that a man who sits and looks straight out of a car window, instead of looking ahead as he would if he sat with one shoulder to the window, as in American cars, does not get such an alarming impression of terrific speed.

Mr. Behr has been quietly operating the trains on this new line in Belgium for some time past, and he has put it to the severest and most exacting tests, such as operating the trains under a speed of 100 miles an hour around sharp curves and dropping them down steep grades without any diminution of velocity. The Tervueren road is three miles long, built in the shape of an ellipse. That is to say, there are two straight sides joined by curved ends, the curves having a radius of 1,000 feet. The track proper is a stout trestle laid upon ground sleepers. Upon top the trestle there is the single bearing rail and at either side of it, lower down, a guide rail.

How the Road is Constructed.

That is not so very wonderful, but you cannot say so much of the car itself. It is a sort of double-decker, about sixty feet long, and dual lengthwise as well as vertically, throughout its lower half. This double lower portion houses the main wheels, the guide wheels and the electric motors, which receive their power from a conductor laid along the track. There are four of these motors weighing three tons each. They are attached to four of the eight carriage wheels. With 600 revolutions per minute, each motor develops 150 horse power. That gives a speed of 100 miles an hour, which can easily be doubled.

Beside the eight carriage wheels there are thirty-two guide wheels, which run upon the guide rails and create the electric current. Thus even at three miles a minute there is no possibility of derailment.

The upper half of the car proper, seats 100 passengers, and has beside compartments for the electrical and conductor. In the electrician's cabin there are two air-brakes, one for braking speed, the other for actually stopping the train.

Electricity comes from a power house, in the Tervueren park, which has a capacity of about 3,000 horse power. The dynamo has a working strength of 750 volts. Electricity is fed to the line by a copper cable properly connected to the steel contact-rail, which is carried on china insulators, made fast to the sleepers. This contact-rail feeds special collectors, which in turn pass the power to the motors.

This line has sharper curves and steeper grades than are likely to occur on any commercial railway. And it has been built most severely and impressively tested under the eyes of commissioners specially appointed by the governments of Belgium and Russia. So it is worth while to test what those big official gentlemen say of it.

"A single-rail line, on trestles, with a bearing surface for the vertical pressure of the rolling stock, and supplied with guide-wheels to resist lateral pressure, offers fewer chances of derailment than the ordinary railway," says one. A second comes in, like a working line, "a single-rail line with curves of the radius common upon express routes can be traveled over much more rapidly and more safely than an ordinary track."

Curiosities of the New Line.

One of the curiosities of the Tervueren line is the method of crossing country roads. At each there are several through the park at Tervueren. In order to maintain such a speed it would be fatal to have to slow down for a crossing. Accordingly, Mr. Behr has rigged up a marvelous contrivance for roads. This contrivance is worked automatically, so that when the train approaches the two sections of the bridge, putting in the middle, fly up, allowing the train to pass at full speed.

Mr. Behr expects in the future to use his new invention not only for short distances between densely populated cities, but for long distances through the country where the passenger traffic is large. If his line is entirely satisfactory, think of the possibilities for still longer ones! For instance, a traveling man might go to bed in the evening in a train in New York and wake up fresh for business in Chicago the next morning. It would be perfectly feasible to go

to Florida for a Sunday's outing, leaving Saturday night and coming back on Monday morning, and according to Mr. Behr, this could be accomplished with even greater safety than that attained in the swift-running double-track trains of today.

Cost of Single Rail Lines.

The question of cost, of course, is of prime importance. Mr. Behr is frank about this. He sets down approximately estimates of first cost at from \$10,000 to \$15,000 the mile, but asserts that the single-rail line can carry passengers at a less rate than is now charged upon fast trains and still pay dividends upon their capital. He says, too, that he sees no likelihood of interfering with freight traffic, and even of monopolizing the passenger business.

What to address is the construction of single-rail systems along some of the great trunk lines possibly in connection with them, so that impatient travelers, or tired ones, or those who are of business, may be whisked away as by magic, leaving the Pullman and vestibule trains to those who have such and leisure.

The success of this Tervueren line is most interesting. It is as much an evolution as it may work a revolution. Various and sundry other single-rail lines have existed in various and sundry parts of the world. Some run by mule power, some by steam. The Tervueren line is, however, the first to run on an elevated track, and the immediate prototype is the single-rail trestle line running from Listowel to Ballyvaughan, in Ireland, which is in itself somewhat notable. Its length is nine miles and a half. It has run for eleven years, and without having a car wheel once leave the track or a passenger or employe make a claim against it for damages. This, though it is operated by steam and runs twenty miles an hour—not an astounding rate of speed, but a very sufficient one under the circumstances.



THE MONO RAILROAD AND ITS INVENTOR.

Mr. Behr built it as later he built the Belgian experimental line. The Listowel model was a line put up by a French engineer out in Algeria. At first he built a double-track line on the ground, but the sand storms covered up his tracks faster than he could uncover them, so he had recourse to trestle construction, along which cars were drawn by mules after the manner of boats on a canal. Happening to see it, Mr. Behr decided that it was a good scheme and proceeded to imitate it upon the Irish coast. From steam and twenty miles an hour the transition has been more natural than rapid. He has gone electric and surely to the end that later he might be as sure of helping the world to go very fast.

Possibilities of the Invention.

Speculation is idle, but prospects such as these invite it. Single-rail lines may help to solve many social problems. For one thing, it is evident that they put the flying machine out of court for at least a century. Two or three miles a minute is faster than flight, have indeed the flight of wild swans and two birds. Good birds have been shot in New England with crops full of Carolina rice, which they must have plucked less than eight hours before. The coast line is something like sixteen hundred miles—hence it appears that the swiftest of all



AT A DEPOT, SHOWING METHOD OF SWITCHING.

feathered things rarely equal the speed of the new electric car.

What wonders, what transformation may it not work up in the Klondike, should the Klondike prove a steeper and richer "peter out?" It seems almost providentially adapted to those altitudes. A trestle sufficiently high might defy even Arctic snows, while static power eliminates the main difficulty of operation. While operating expenses could not be light, it is safe to assume nobody would grudge double or triple fare. Outbound passengers would pay hopefully, with an eye single to nuggets and chains, inbound ones joyfully, to the jingling tune of gold already in the pocket.

The assertion may seem at first blank extravagant, but a little thought will prove that such is the mechanical advance of the last twenty-five years a railway could now be built to the Arctic circle more quickly and more easily than was the first line to the Pacific coast.

TAMMANY'S BIG FEAST.

How the Chiefs Will Celebrate Thomas Jefferson's Birthday.

The biggest dinner ever given in New York will be served next month at the Metropolitan opera house, says the New York Journal. Sixteen hundred guests will sit at the banquet. The occasion will be Thomas Jefferson's birthday anniversary, on April 13. Tammany hall chiefs will be the hosts and the members of that organization from every nook and corner of Greater New York will make up the vast majority of the diners. But there will also

be as guests nearly 100 of the most prominent men throughout the union. Two thousand operators will sit in the galleries and boxes.

A dinner for 1,600 is quite beyond the resources of the Waldorf-Astoria. It is four times the number that Belmont or Sherry ever undertook to serve. It is almost equal to feeding two whole regiments of soldiers in one room.

It will take 250 spring lambs to furnish the tender roasts and other choice cuts. A special train of ten express cars will come up from Georgia and Virginia, bringing strawberries, asparagus, green peas, etc.

To supply a single course of shell oysters will require twenty-six barrels of the finest kind that can be selected. Twenty-five barrels more of smaller oysters will be used for making sauces and dressings. But perhaps the most exciting of all will be the wine list. Champagnes from \$10 to \$20 a bottle will be one of the courses. Then there will be all the old favorites in Burgundies, sherrys, angelicas, vermouths and black wines from "stranges an old" that it would take an historian to tabulate them.

Altogether, 1,250 gallons of liquors will be supplied. There will be 5,000 bottles of champagne alone. Imagine the 7,000 bottles in all in which this will come filled up for an exhibit. It would be fifteen feet in the base and rise up to the orchestra floor in the form of a pyramid half way to the dome of the Metropolitan opera house.

The amount of coffee to be drunk will be somewhat less, but even this will amount to 800 plants, or enough to fill a coffee pot the size of three barrels.

It will take seventy-five turtles, 2,500 crabs and 800 terrapins, 2,400 lobsters, 1,900 catfish, ducks and geese, turkeys and pheasants in like proportion.

To provide space for 1,600 to sit down at tables, the orchestra space will be floored over on a level with the stage. The stage alone of the Metropolitan opera house is ninety feet deep and 100 feet across. But this will be less than half the space occupied by the tables. They will extend over

the false flooring clear out beneath the first balcony. This will be a space of 25,000 square feet, or equal to that of thirteen city building lots.

The laying out of the tables that are to seat these 1,600 diners was an important matter. It is a chef engineer made a special survey last week. The ground floor, it was figured, could seat only 1,250. So the opera boxes and the wings of the stage will have to be fitted up with tables to seat the remaining 350.

On the stage, on an elevated platform, will be placed seats for 100 of the honored guests and some of the leading waiters of New York. It will require 250 waiters at the tables. A corps of 200 will be needed in the chef's department to cook and dish up this dinner.

For a temporary kitchen the arched sidewalk along the Thirty-ninth street side of the Metropolitan opera house will be boarded up and made into a vast shed. Here will be placed ranges, sideboards, ice chests and all the accessories of a hotel culinary department.

The basement and cellar of the opera stage will also be used for this purpose.

Even such commonplace things as dishes, spoons, knives and forks have the importance on an occasion like this. For it will take 10,000 plates, 20,000 knives and forks, 10,000 spoons and so on through the whole list of similar things. The cost of this dinner party will be \$16,000. It is said, for which the individual diners will pay at the rate of \$10 apiece, except the invited guests.

A curious feature of the political dinner is that it will have living souvenirs of the occasion. Jefferson's birthday. These souvenirs are to be twelve men from

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THE BEE announces that it will combine one thousand friends and readers in a co-operative club to be known as The Bee Century Club. Each member of this club will secure one set of that best of all reference libraries, The Century Dictionary and Cyclopaedia, at a saving of about 40 per cent of the prices now prevailing. Never before has such an offer been made in the west and never again can it be duplicated. All middle-men, all booksellers' profits, all agents' commissions, will be done away with, so that each club member will be on a par with the largest wholesale buyer. The saving thus made is the result of an alliance between

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Notwithstanding the expenditure of over one million dollars upon the original edition of The Century Dictionary and The Century Cyclopaedia of Names, we have been for the past five years collecting and collating material for their revision and expansion into one comprehensive work, The Century Dictionary and Cyclopaedia. As an encyclopaedia The Century is the most complete in existence, containing 150,000 encyclopedic articles, with 8,000 illustrations. As a dictionary it is the most comprehensive ever published, having a total of over 500,000 definitions and 300,000 quotations. As an atlas it is the most up-to-date, and contains 117 double-page maps, 128 inset maps and forty historical maps. But The Century is not simply an encyclopaedia, a dictionary and an atlas. It includes also an immense amount of plain, practical information on every-day subjects, to be found heretofore only in special handbooks. The ten volumes, with their 8,500 pages, make a complete reference library.

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To Our Friends and Readers:— We shall form a club of a thousand members, each of whom, because he combines with the other nine hundred and ninety-nine members, to purchase a thousand sets of The Century Dictionary and Cyclopaedia at one time, secures the work at the publishers' lowest wholesale price. Each club member is therefore on a par with the largest wholesaler who buys a thousand sets.

The manner of joining this club is clearly outlined below, and its advantages are at once apparent. Through the enterprise of The Bee, the power of co-operation is applied to an important undertaking. By paying a small entrance fee, intended simply to cover our expenses, our readers and friends to the number of one thousand, are privileged to join our Century Club, and each one to purchase one set of The Century Dictionary and Cyclopaedia at a saving of about 40 per cent. The complete work is delivered upon payment of the small club fee, and is then paid for in small monthly payments.

The Bee would need many columns of space to describe adequately this masterpiece of master minds, but it takes for granted that its readers are familiar with the scope and completeness of the work. It is our more pleasant task to bring the net within easy reach of all our friends and readers, as we do now through our Century Club. Some particulars regarding The Century are given in another part of this page. MARCH 14, 1899. THE BEE.

OUR POSITION DEFINED.

WE do not ask our readers to believe that we are undertaking the formation of this club, with its attendant responsibilities and expense, entirely without compensation. Nor, on the other hand, for any direct pecuniary gain. We add to the cost of each set a small membership fee, just enough, we estimate, to reimburse us for our outlays on freight, postage, office expenses, etc., incidental to the formation of the club. Remember that this membership fee is added to the wholesale price of the books, and that after the purchaser pays this nominal charge for our services he still saves about 40 per cent of the regular price of the books.

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